

In the Claims:

1. (Withdrawn) In a device for collecting airborne target samples for analysis, the improvement comprising:  
a quantity of crushed reactive aerogel adsorbate.
2. (Withdrawn) The improvement of Claim 1, wherein said aerogel adsorbate includes chemically specific adsorbing chemistries for adsorbing specific target compounds.
3. (Withdrawn) The improvement of Claim 1, wherein said aerogel adsorbate includes glass fibers.
4. (Withdrawn) The improvement of Claim 3, wherein said glass fibers are of a 1-0.2 $\mu$ m size.
5. (Withdrawn) The improvement of Claim 1, wherein said aerogel adsorbate is impregnated with a metal.
6. (Withdrawn) The improvement of Claim 1, wherein said aerogel adsorbate has a surface area ranging from about 300m<sup>2</sup>/g to about 1100 m<sup>2</sup>/g.
7. (Withdrawn) The improvement of Claim 1, wherein said aerogel adsorbate has a density in the range of about 0.003 g/cm<sup>3</sup> to about 0.7 g/cm<sup>3</sup>.
8. (Withdrawn) The improvement of Claim 1, wherein said aerogel adsorbate is composed of crushed aerogel selected from the group consisting of chemically treated silica aerogels, untreated inorganic aerogels, metal impregnated silica aerogels, metal oxide-silica aerogels, and pure metal oxide aerogels.
9. (Withdrawn) The improvement of Claim 1, wherein said crushed reactive aerogel adsorbate is contained in an open ended container, whereby airborne target material can flow through the containers for adsorption of target samples by the aerogel adsorbate.

10. (Withdrawn) The improvement of Claim 10, wherein said open ended container is constructed and packed with aerogel adsorbate to form a sampler selected from the group consisting of low volume and high volume samplers.

11. (Currently Amended) A method for environmental and industrial sampling of airborne target material, comprising: providing a quantity of an aerogel absorbate, crushing the aerogel absorbate, exposing the crushed aerogel absorbate to an airborne material for collecting a sample thereof, removing the collected sample, and analyzing the collected sample by at least one of:

- a) observing a color change in the aerogel absorbate; and
- b) detecting the airborne material by GC/ MS.

12. (Previously Presented) The method of Claim 11, additionally including forming the aerogel absorbate so as to contain chemically specific adsorbing chemistries.

13. (Previously Presented) The method of Claim 11, additionally including containing the aerogel absorbate in an open ended container prior to exposing the aerogel absorbate to an airborne material.

14. (Previously Presented) The method of Claim 13, wherein containing the aerogel absorbate is carried out so as to form a low volume or a high volume sampler.

15. (Previously Presented) The method of Claim 11, wherein removing the collected sample is carried out by heating the aerogel adsorbate to a temperature below the melting point of the aerogel causing the collected sample to be released, and collecting the released sample.

16. (Previously Presented) The method of Claim 11, wherein removing the collected sample is carried out by dissolving the aerogel adsorbate in a solution, removing the solution, and retaining the collected sample.

17. (Previously Presented) The method of Claim 16, wherein removing the solution is carried out by a filtering operation.

18. (Previously Presented) The method of Claim 11, wherein removing the collected sample is carried out by a method selected from the group consisting of thermal release and liquid dissolving/filtering operations.

19. (Previously Presented) The method of Claim 11, wherein providing the quantity of aerogel adsorbate, is carried out by selecting an aerogel adsorbate from the group consisting of aerogels having chemically specific absorbing chemistries, and aerogels treated or impregnated with material for adsorbing specific target compounds.

20. (Previously Presented) The method of Claim 11, wherein the aerogel adsorbate further comprises glass fibers.

21. (Previously Presented) The method of Claim 20, wherein the glass fibers have diameters between about 0.2 $\mu\text{m}$  and about 1.0 $\mu\text{m}$ .

22. (Previously Presented) The method of Claim 11, wherein the aerogel adsorbate further comprises being impregnated with a metal.

23. (Previously Presented) The improvement of Claim 11, wherein the aerogel adsorbate has a surface area ranging between about 300 $\text{m}^2/\text{g}$  and about 1100  $\text{m}^2/\text{g}$ .

24. (Previously Presented) The improvement of Claim 11, wherein the aerogel adsorbate has a density in the range between about 0.003  $\text{g}/\text{cm}^3$  and about 0.7  $\text{g}/\text{cm}^3$ .

25. (Previously Presented) The method of Claim 11, wherein the crushed aerogel adsorbate comprises at least one aerogel adsorbate selected from chemically treated silica aerogels, untreated inorganic aerogels, metal impregnated silica aerogels, metal oxide-silica aerogels, and pure metal oxide aerogels.